DOCUMENT RESUME

ED 192 561 FL 011 604

AUTHOR Liberto, Shelley M.
TITLE Learning Arabic Sounds: A Guide to the Pronunciation of the Phonemes of Arabic for Native Speakers of English.
PUB DATE 80
NOTE 58p.

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Arabic: Articulation (Speech): Consonants: *Phonemes: Phonology: *Pronunciation Instruction: *Second Language Learning: Vowels

ABSTRACT

The purpose of this guide is to teach English speakers accurate pronunciation of the Modern Standard Arabic phonemes. Included are discussions concerning attitudes toward language learning in general, basic linguistic concepts, a descriptive survey of the phonemes with detailed instructions for their production, and lists of minimal pairs suggested for use in phonology drills and exercises. The distinctive features of the phonemes are graphically described and verbal instructions lead the student to their proper pronunication. Attention is given to the special difficulties encountered by native speakers of English in attaining Arabic sound production skills. Both common and exclusive characteristics of the two languages are used as a basis for comparison and contrast, directing the student to the discovery and understanding of the new and different Arabic sound system. The guide assumes the aid of a native Arabic speaker as a model for mimicry and a source of criticism and correction. (Author/PJM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED192561

LEARNING ARABIC SOUNDS:

A Guide to the Pronunciation of the Phonemes of Arabic for Native Speakers of English

Shelley Liberto

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Shelley M. Liberto

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

FL011604

© 1980 S. Liberto

CONTENTS

INTRODUCTION	2
PRELIMINARY CONSIDERATIONS	4
The Phoneme	6
Unlearning English	9
THE PHONEMES IN GENERAL	14
The Consonants	14
Double Consonants	21
The Vowels	22
THE PHONEMES IN DETAIL: Their Pronunciation	25
The Consonants	25
The Vowels	44
THE EFFECTS OF CONSONANTS ON NEIGHBORING PHONEMES	47
Vowel Modification	47
Consonant Modification	49
Assimilation of the Definite Article	50
MINIMAL PAIRS LISTS	52
REFERENCES	57

INTRODUCTION

It is the aim of this work to impress native English speaking students of Arabic with the necessity of attaining the ability to accurately produce the phonemes of Modern Standard Arabic and to guide them to correct pronunciation skills. Included are discussions concerning attitudes toward language learning in general, basic linguistic concepts, a descriptive survey of the phonemes with detailed instructions for their production, and lists of minimal pairs suggested for use in phonology drills and exercises. A concerted effort is made to graphically describe the distinctive features of the phonemes and to lead the student to their proper pronunciation through verbal instructions. Attention is given to the special difficulties encountered by native speakers of English in attaining Arabic sound production skills. Both common and exclusive characteristics of the two languages are used as a basis for comparison and contrast, directing the student to the discovery and understanding of the new and different Arabic sound

system.

This guide assumes the aid of a native Arabic speaker as a model for mimicry, and a source of criticism and correction.

PRELIMINARY CONSIDERATIONS

Learning to produce the sounds of Arabic for native speakers of English has been a serious problem, traditionally ignored or conveniently overlooked by both student and teacher. Because of the exotic nature of the sound system and the existence of phonemes rarely heard and almost never uttered by English speakers, a special effort must be made to recognize new sounds, discover previously unpioneered ways of producing them, and faithfully practice them until they can be produced with ease and punctuality. This requires hard work, but more importantly, it calls for a frame of mind which prepares the individual for an entire revolution of long established habits of listening and articulation. Arabic sounds which may resemble English must not be reproduced as such, for the slightest variation of the pure Arabic utterance may yield a change in meaning, and therefore a misunderstanding on the part of the listener, or at the very least, an unattractive accent. We cannot take short-cuts to Arabic pronunciation by transplanting English sounds

readily and indiscriminately. It must be understood that the development of new habits of articulation requires the abandonment of native speech patterns, although one may be tempted to resort to using his own speech system as an easy solution to the problem.

Because the process of learning to produce new sounds demands time, energy, patience and determination by student and teacher, both parties in the past seem to have entered into a wanton agreement to ignore the issue. Some have even gone so far as to resign themselves to the absurd notion that native English speakers simply lack the ability to pronounce Arabic sounds properly. The result has been the rearing of a great number of students of Arabic who, although they may read and write well, have come to utter a functionless language hybrid which employs correct Arabic morphology and syntax, but uses an English phonemic system. Much to their dismay, they find themselves misunderstood, or not understood at all, when they enter the Arabic-speaking community. The effort to attain proper pronunciation is a fundamental part of learning any new language.

The Phoneme

A phoneme is defined as a class of phonetically similar sounds which are in noncontrastive distribution within a language. The class of sounds of the English phoneme /t/, for example, includes two variations represented by [pʰ] and [p⁻] . English /p/, when pronounced in the word pin, is immediately followed by a puff of air, or 'aspiration' ([pʰ]). On the other hand, when pronounced in the word spin, no puff of air follows, and the p is said to be 'unaspirated' ([p⁻]). This puff of air can be perceived when a loosely held piece of paper is suspended in front of the mouth while saying these two words. These variations, or different sounds of a phoneme are called 'allophones' and are said to be 'noncontrastive' because although they are slightly different from one another, they are not different enough to change the identity of the sound: they are both perceived as /p/.

These variations of one meaningful sound within a language are internalized at early stages of native language development, and pose no problem or confusion of meaning for the native speaker. It is during for-

eign language acquisition that one must beware that such variations may change the perception of a phoneme in the language being learned. That which is merely an allophone of an English phoneme may represent an entirely different phoneme in another language. The Spanish phoneme /s/, for example, has two allophones, [s] and [z]. Although these sounds contrast and represent different phonemes to native speakers of English, they represent the same phoneme for Spanish speakers. The Spanish word casa is properly pronounced /kasa/, but if it is mispronounced as /kaza/, it will still be perceived and understood as being the same word: [s] and [z] do not contrast. This noncontrastiveness of [s] and [z] holds true throughout the entire Spanish language. In English, however, [s] and [z] are two different phonemes altogether. They are sounds that contrast within the language. A native speaker of Spanish who does not recognize the significance of the different sound system of English, or who attempts to apply his Spanish phonemic system to English, will be misunderstood or not understood at all. The English pairs rice and rise, face and phase, ice and

eyes, lice and lies, are just a few examples of words that would be confused. Their meanings depend on the contrast between /s/ and /z/ , a contrast which does not exist in Spanish.

The same sort of confusion and misunderstanding plagues native speakers of English who do not bother to learn the proper pronunciation of the Arabic phonemes, for there are several of these which have qualities similar to English, but are not identical, and must be pronounced in a purely Arabic fashion to be perceived correctly. Some examples that will be dealt with later in more detail are the so called 'emphatic' phonemes /Đ, T, D and S/, which are identical to English /đ, t, d and s/ except for one vital feature: 'velarization'. If this added sound feature is not recognized and produced properly, these phonemes will be heard and understood as another class of sounds, /đ, t, d and s/, which are also phonemic in Arabic. As well, the student is confronted with several other phonemes which are entirely alien to English and must be recognized and learned from scratch.

Unlearning English

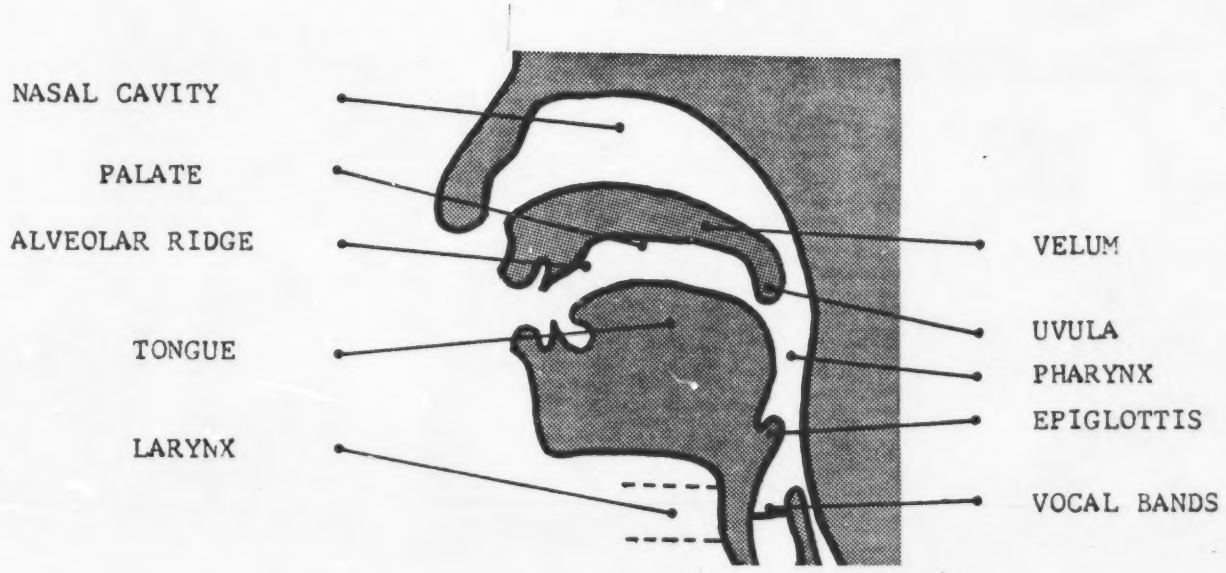
English is said to be a 'lazy' language because it requires very little muscular energy for production when compared to other languages of the world. The extreme laxness of pronunciation results in a reduction of unstressed vowels to a neutral sound represented by /ə/ and referred to by linguists as 'schwa'. This process of unstressed vowel neutralization is called 'gradation' and is an annoying characteristic of English which renders it one of the most difficult of foreign languages to learn. Arabic, however, requires much more muscular energy than English, and all sounds are pronounced clearly and distinctly in their pure forms. While this may be advantageous to those who will find it easier to learn a language which represents its sounds so distinctly, it demands a special effort to intensify articulation to a degree that may seem overly exaggerated to native speakers of English. One must therefore become comfortable with the vigor of Arabic pronunciation and develop more intense habits of articulation to attain Arabic-sounding speech.

In learning Arabic phonemes, one is further called

upon to activate parts of the vocal apparatus which have never before been used in speaking his own language. The production of every English consonant occurs at some 'point of articulation' no farther back in the buccal cavity than the velum, or soft palate. (See Figure 1.) Several Arabic phonemes, however, will require a facility of movement of the muscles of the larynx and pharynx, and manipulation of the tongue to positions much farther back in the mouth than required by English. Arabic is thusly often referred to as a language of the throat or 'gutteral'. Moving the locus of neural attention to another position in the vocal tract demands that the learner first discover the proper muscular contractions which produce the new utterances by trial and error, prompted by verbal coaching with a native speaker as a model. Once a correct sound is produced, it must be rectified and repeated with fidelity until the new neuro-muscular reflex becomes a habit which is so automatic that it can be reproduced promptly and without conscious effort.

Another problem of English interference is the characteristic diphthongization of English vowels.

Figure 1.


NASAL CAVITY
PALATE
ALVEOLAR RIDGE
TONGUE
LARYNX
VELUM
UVULA
PHARYNX
EPIGLOTTIS
VOCAL BANDS

'Diphthongs' are complex speech sounds beginning with one vowel and moving to another vowel position within the same syllable, denoted by a change in position of some articulatory organ. For example, the English vowels are represented orthographically as the individual letters A, E, I, O, and U, but are in fact individually pronounced as clusters of vowels: /ey/, /iy/, /ay/, /ow/ and /iyuw/. Note that in each case, some articulatory organ changes position. Pronunciation of O and U entails a final rounding of the lips, while A, E and I all require a final raising of the jaw and tongue. Arabic vowels, however, are pronounced in their 'pure' forms without movement or shift to another articulatory position. Diphthongs are found in the language, but only where two independent pure vowel phonemes occur together. When a speaker injects a diphthong where a pure Arabic vowel is called for, he risks being misunderstood, or at least marking himself with a notable accent. Learning to pronounce vowels purely is not a difficult undertaking. Students must simply become aware of this difference in the languages and mimic the native-speaking model.

Other less general problems of English phonetic interference will be dealt with as they occur in discussions of the individual Arabic phonemes.

THE PHONEMES IN GENERAL

The Consonants

Consonants are described with terms identifying the distinctive characteristics of their production. For the purposes of learning the Arabic consonants, these characteristics will be grouped according to 'voice', 'point of articulation' and 'manner of articulation'.

The feature of voice simply tells us whether or not a particular consonant is uttered with the vocal bands in a position to produce a buzzing sound. This distinction is best demonstrated by placing one's hand on the larynx and feeling the vibration of the vocal bands when utterances are voiced. For example, the feature of voice distinguishes [s] from [z]. Pronouncing these sounds normally with the hand on the larynx will demonstrate the contrasting features 'voiced' and 'voiceless'. Other contrastive pairs distinguished by the feature of voice only are [p] and [b], [t] and [d], and [k] and [g].

Consonant sounds are produced by interrupting the

free flow of air from the lungs. The second feature to be considered, point of articulation, specifies the location of this interruption within the articulatory tract, and identifies the articulatory apparatus used in impeding the free passage of air. An English /t/ is therefore said to be 'alveolar' because the free flow of air is interrupted by placing the tip of the tongue on the 'alveolar ridge'. (See Figure 1.) Likewise, English /k/ is labeled 'velar' because the tongue interrupts the passage of air at the 'velum', English /f/ is 'labio-dental' because air is impeded by placing the lower lip on the upper teeth, and so on. Although many of the Arabic consonants involve use of the tongue in the impedance of air flow as in English, there are a few which are 'pharyngeal' or 'glottal', and involve points of articulation alien to English speech.

Finally, consonants are classed according to their manner of articulation, of which there are six categories. Here, we are not concerned with the locus or point of articulation, but the nature of impedence of the free flow of lung air.

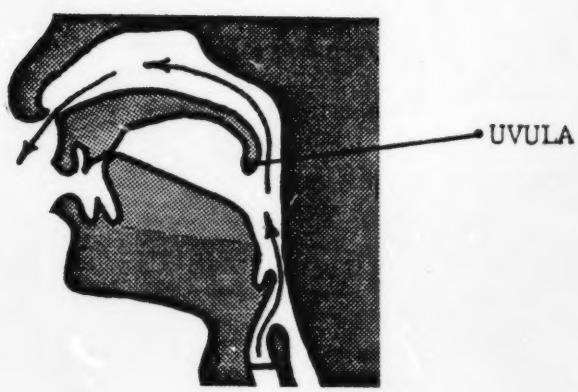
'Stops' are consonants produced by completely cutting off the flow of air through the articulatory tract, as English /p/ and /t/. In producing these two phonemes, the air flow is halted at the lips and alveolar ridge, respectively.

The label 'fricative' is given to sounds which are produced by only partial interruption of the flow of air, yielding friction or turbulence, but not entire stoppage. English /f, v, s, and h/ are examples of fricatives. Pronounced in isolation, a continuing but impeded flow of air can be perceived.

The term 'affricate' applies to sounds which begin as stops, but end in fricatives. English /č/ as in <u>church</u>, and /ǰ/ as in <u>judge</u>, begin with the stops /t/ and /d/, respectively, but finish with an abrupt release of air, qualifying them as affricates. They could, in fact, be represented as clusters of phonemes: /č/ as /tš/ and /ǰ/ as /dž/.

English /m/ and /n/ are said to be 'nasal' because of the sound quality produced when the column of air is diverted to the nasal cavity. This is accomplished by opening the passage to the nasal cavity at

Figure 2



nasalization
of /n/

the uvula, causing the air to enter the nasal cavity and exit through the nostrils, creating a humming effect. (See Figure 2.)

English and Arabic /r/ are both referred to as 'liquids', although the Arabic /r/ is differentiated as a 'flap'. This feature is attributed to an /r/ which is produced by quickly tapping the alveolar ridge once with the tongue while air is passing through the mouth. There are no flapped phonemes in English, and the production of this sound quality will require some effort on the part of native speakers of English.

The only 'lateral' phoneme in English is /l/. The term applies to the production of this sound because air escapes laterally through the side or sides of the tongue. Arabic /l/ however is not precisely the same as its English counterpart, and this distinction will be dealt with later in detail.

The following is a list of the consonants of Arabic, each with its corresponding orthographic and phonetic symbols, accompanied by a phonetic description.

The Consonants of
Modern Standard Arabic

	Orthographic Symbol	Phonetic Symbol	Phonetic Description
1.	ب	b	voiced bilabial stop
2.	م	m	voiced bilabial nasal
3.	ف	f	voiceless labiodental fricative
4.	ث	θ	voiceless interdental fricative
5.	ذ	ð	voiced interdental fricative
6.	ل	l	voiced dental lateral
7.	ت	t	voiceless dental stop
8.	د	d	voiced dental stop
9.	س	s	voiceless alveolar fricative
10.	ز	z	voiced alveolar fricative
11.	ظ	ð	voiced velarized interdental fricative

	Orthographic Symbol	Phonetic Symbol	Phonetic Description
12.	ط	T	voiceless velarized alveolar stop
13.	ض	D	voiced velarized alveolar stop
14.	ص	S	voiceless velarized alveolar fricative
15.	ن	n	voiced alveolar nasal
16.	ر	r	voiced alveolar flap
17.	ش	š	voiceless palatoalveolar fricative
18.	ج	a) ž	voiced palatoalveolar fricative (Algeria, Morocco, Lebanon, Syria and Tunisia)
		b) ǧ	voiced palatoalveolar affricate (countries not mentioned above)
19.	ك	k	voiceless velar stop
20.	خ	x	voiceless velar fricative

	Orthographic Symbol	Phonetic Symbol	Phonetic Description
21.	غ	ġ	voiced velar fricative
22.	ق	q	voiceless uvular stop
23.	ح	ḥ	voiceless pharyngeal fricative
24.	ع	c	voiced pharyngeal fricative
25.	ه	h	voiceless glottal fricative
26.	ء	ʾ	glottal stop

Double Consonants

The Arabic language employs a system of doubling the length of consonants, affecting word meaning. The Arabic word for lesson, for example, is pronounced /drs/, but the verb meaning to study is formed by doubling the /r/ to /drrs/ (trilled). This very important phonemic feature must be learned and produced as diligently as any new phoneme in the language. It is represented orthographically by a small w placed above the consonant to be doubled, referred to

as a 'shedda'. A helpful way for native speakers of English to perceive the doubled length of such consonants is to utter two English words in unbroken succession, which end and begin with the same consonant. When the pairs cat tail, bad dog and pen knife are uttered in the natural flow of an English sentence, the final consonant of the first word is not broken off, separating it from the second word, but is simply pronounced for a greated length of time. In producing the elongated consonants in Arabic, it is therefore helpful for the native speaker of English to think of them as a cluster of two consecutive consonants which end and begin two consecutive syllables.

The Vowels

The Arabic vowel system is a simple one, composed of only three short sounds and their corresponding long forms. They are pronounced purely without diphthongization, although it is the tendency of native speakers of English to diphthongize them as in normal English speech. Diphthongization does occur in Arabic, but only as a result of the occurrence of two consecutive vowel phonemes.

A feature requiring the special attention of native speakers of English when learning Arabic vowels is that of length or duration of vowel pronunciation. Note the difference in length of the vowels in English <u>father</u> and <u>hot</u>, <u>bead</u> and <u>beat</u>, <u>boot</u> and <u>foot</u>. Each Arabic vowel phoneme, when represented by an Arabic letter, is produced in its longer form. The corresponding shorter forms are represented by 'diacritic marks' placed above or below the letter in the word in in which they occur, in a position which marks the place of their pronunciation. The duration of the pronunciation of the long vowels is generally said to be twice that of the short vowels. The phonetic symbol for the elongation of a vowel is ':'.

The following is a list of the vowels of Arabic, their orthographic and phonetic symbols, and descriptions.

The Vowels of Arabic

	Orthographic Symbol	Phonetic Symbol	Description of Quality
1.	´	æ	As in English <u>hat</u>.
2.	ا	æ:	Long version of /æ/

	Orthographic Symbol	Phonetic Symbol	Description of Quality
3.	ِ	i	As in English bit.
4.	ي	i:	Long version of /i/.[1]
5.	ُ	u	As in English boot.
6.	و	u:	Long version of /u/.

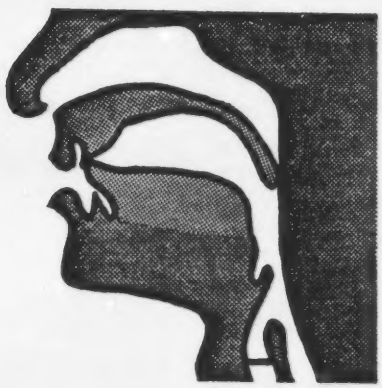
1. Lengthening usually results in greater tongue height, yielding a higher quality as in English eat.

THE PHONEMES IN DETAIL: Their Pronunciation

The Consonants

1. /b/ ب Equivalent to English /b/ as in boy.
2. /m/ م Equivalent to English /m/ as in man.
3. /f/ ف Equivalent to English /f/ as in far.
4. /θ/ ث Equivalent to English /θ/ as in bath.
5. /ð/ ذ Equivalent to English /ð/ as in this. Voiced counterpart of /θ/, articulated at the same point and in the same manner.
6. /l/ ل Similar to English /l/ but is said to be 'clear' as opposed to 'dark'. To pronounce the clear Arabic /l/, touch the back of the upper teeth with the tip of the tongue, simultaneously raising the front of the tongue toward the palate and depressing its back. (See Figure 3.) The clear /l/ generally occurs in English before vowels as in leave and last. The dark English /l/, produced by placing the tip of the tongue on the alveolar ridge and raising the back of the tongue toward the velum, occurs be-

Figure 3



Arabic 'clear' /l/

fore consonants and in final position. (See Figure 4.) Examples of English dark /l/ are found in <u>feel</u> and <u>milk</u>, and should be pronounced in contrastive pairs with the examples given above. It is in the positions where it does not occur in English that the clear Arabic /l/ must be practiced by native speakers of English. When the difference has been perceived and replicated, it may be helpful to practice pronouncing the clear /l/ in difficult environments such as <u>el</u>, <u>al</u>, <u>ilt</u>, <u>eld</u>, <u>alt</u>, etc. (Although Arabic /l/ corresponds to the clear version of English /l/, the dark /l/ does occur in Arabic in some very rare cases, the most notable being in the word for <u>God</u>, /ʔa ɬɬah/.)

7. /t/ ت Similar to English /t/ except for a more forward point of articulation. English /t/ is normally produced with the tip of the tongue placed on the al-

Figure 4

English 'dark' /l/

veolar ridge, while Arabic /t/ requires to tongue to touch the back of the upper teeth.

8. /d/ د Voiced counterpart of /t/, articualted at the same point and in the same manner.

9. /s/ س Equivalent to clearly-pronounced English /s/. Native speakers of English sometimes pronounce /s/ in a weak and unintelligible manner which must be aviod-ed in speaking Arabic, as such utterances are easily confused with /θ/ by Arabic speakers. It may be helpful to lift the upper lip slightly clear of the upper teeth.

10. /z/ ز Voiced counterpart of /s/, articulated at the same point and in the same manner.

11. /S/ ص 'Velarized' version of Arabic /s/, articulated at the same point and in the same manner, except that the back of the tongue is raised toward the velum,

yielding a distinct hollow sound. (See Figures 5 and 6.) A slight rounding of the lips usually accompanies its articulation.

To discover the proper pronunciation of /S/, students should begin by listening to the native-speaking model contrast its sound with /s/ in 'minimal pairs' (pairs of words whose only difference is the one phoneme which is being contrasted. See 'Minimal Pairs List', page 52.) After attaining the ability to hear and identify /S/, students may try pronouncing the English word <u>saw</u>, making a special effort to raise and move the back of the tongue toward the velum, as far back in the mouth as possible. When producing velar sounds properly, an empty space will form in the buccal cavity, creating the resonating hollowness distinguishing these phonemes from their non-velarized counterparts. Re-

Figure 5

English /s/

Figure 6

Arabic velarized /S/

sist the temptation to reduce /S/ to /s/, for the sound difference is absolutely phonemic, and mispronunciation will lead to a misrepresentation of meaning.

12. /T/ ط Velarized version of Arabic /t/, articulated at the same point and in the same manner with the back of the tongue raised toward the velum. Aside from velarization, /T/ is articulated slightly differently from /t/ in that a larger area of the front of the tongue is pressed against the alveolar ridge, and the tongue is more tense. Because this phoneme is a stop, the explosive effect rectifies the hollowness which is typical of all velarized sounds, causing the buccal cavity to act as a sort of resonance chamber. The difference in sound between /T/ and /t/ is therefore more impressive than that of /S/ and /s/, and they should be easily distinguishable.

13. /D/ ض Velarized version of /d/, articulated

at the same point and in the same manner with the back of the tongue raised toward the velum. The lips remain relaxed and slightly rounded. /D/ has the same resonance quality as the other velarized Arabic stop, /T/, the only feature differentiating them being voice.

14. /ḍ/ ظ Velarized version of /d/, articulated at the same point and in the same manner with the back of the tongue raised toward the velum. The lips are relaxed and slightly rounded. Here, the resonance effect is less impressive than with the more explosive stops, /T/ and /D/, but a distinctive hollow sound still sets it apart from its non-velarized counterpart, /d/.

15. /n/ ن Equivalent to English /n/ as in win.

16. /r/ ر Voiced alveolar 'flap' produced by flipping the tip of the tongue to quickly tap the alveolar ridge. Although the flap is not phonemic in English, it is

often uttered inadvertantly during rapid pronunciation of words such as <u>water</u>, <u>bitter</u>, <u>fattest</u>, <u>little</u>, and others containing /t/ in a middle position between vowels. An effort should be made to avoid producing a 'trilled' /r/, which is a series of successive taps of the tongue on the alveolar ridge, producing a staccatoed machine gun effect. Both the flapped and trilled /r/'s are found in Spanish. A helpful exercise for arriving at the production of the flap is to pronounce the sequence /tədə:tədə:tədə:.../ with gradually increasing rapidity, then quickly shifting to /tərə:tərə:tərə:.../.

17. /š/ ش Equivalent to English /š/ as in <u>shell</u>.

18. a)

/ž/ ج Voiced counterpart of /š/, articulated at the same point and in the same manner. Equivalent to English /ž/ as in <u>garage</u>.

This phoneme is restricted to use in Algeria, Lebanon, Morocco, Syria and Tunisia.

b)

/ǰ/ ج Equivalent to English /ǰ/ as in judge. Use is restricted to Aracic-speaking countries not employing /ž/. (See 18a above.)

19. /k/ ك Equivalent to English /k/ as in can.

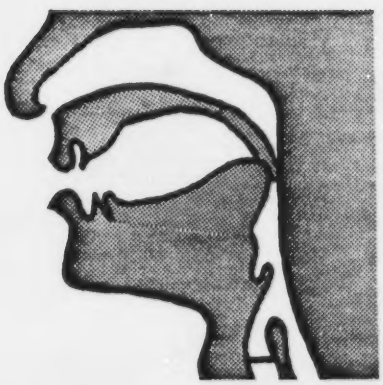
20. /x/ خ Voiceless velar fricative, best described to native speakers of English as the sound produced when clearing one's throat with the mouth open. It does not occur in English, but is a phoneme of German as in bach. /x/ is articulated at the same point as /k/, but rather than actually touching the velum with the tongue, a slight space is left to allow a turbulent stream of air to squeeze through, creating friction and a 'scraping' effect. The tendency has been for native English speakers to substitute

the English phonemes /k/ and /h/, the cluster /kx/ or /x/. Proficient pronunciation of /x/ in its pure form may be enhanced by listening to, and reproducing sets of words whose only difference is the substitution of /x/, /ẖ/ and /h/, i.e. 'minimal triplets'. (See note, page 55.)

21. /ġ/ غ Voiced counterpart of /x/, articulated at the same point and in the same manner. This phoneme is best characterized as the sound made while gargling without water in the mouth. It is produced by simply pronouncing /x/ and simultaneously activating the vocal bands.

22. /q/ ق Uvular counterpart of /k/, produced in the same manner, but with the back of the tongue pressed hard against the uvula, as far back in the mouth as possible. (See Figure 7.) This sound often presents problems for native speakers of English because it is not found in English,

Figure 7



Uvular Arabic /q/

and requires placing the tongue in a very alien position. The achievement of the production of /q/ therefore requires patience and perserverence, and is best attained by a method of trial and error until the correct tongue position and sound effect are discovered. When the tongue is pressed hard against the uvula, both the buccal and nasal passages are sealed off, preventing the escape of any air until the moment of explosive release. This sudden release of air, originating very far back in the mouth, combines with the empty state of the buccal cavity to produce the hollow resonating effect which differentiates it from /k/. The necessary lowness of the position of the tongue also affects the sound of neighboring 'high vowels' within a word, and this often aids in the perception of /q/. (See Vowel Modification, page 47.) Work with the minimal

pairs in the final section of this work is recommended.

23. /ħ/ ح Voiceless fricative, similar to English /h/, but articulated with a greater force of aspiration, and with constriction of the pharynx. /ħ/ is one of the most difficult Arabic phonemes to master because it has the exotic feature of 'pharyngealization'. This part of the vocal tract is never used in normal English speech, and its control will have to be discovered by listening to the Arabic native speaker, and trial and error utterance. One method of pronunciation which may lead the student to discovery of /ħ/ is to whisper English /æ/, as in bat, very loudly. Another is to pronounce ordinary English /h/ while tightening the throat muscles and increasing the amount of air exhaled. The common error among native speakers of English is to substitute the much

laxer /h/, or to create velar friction producing /x/. As we have seen, these are two independent phinemes, and their utterance in place of /ħ/ would yield a different meaning and misunderstanding.

24. /ᶜ/ ع Generally said to be the voiced counterpart of /ħ/, also articulated with constriction of the pharynx. There is no English equivalent, and much patience and effort will be required to discover, rectify and produce /ᶜ/ with ease. One method of arriving at its production is to constrict the pharynx as if preparing to pronounce /ħ/, and then adding the feature of voice while exhaling. The sound produced should resemble English /æ/ as in <u>hat</u>, but with its origin deep in the throat. It may be described as a deep groan, or the sound one makes when emulating a croaking frog. The temptation will be to relax the pharynx, resulting in a substitution of the Arabic

vowel /æ/ for the consonant /ᶜ/, leading to confusion between the phonemes and misunderstanding. This must be avoided, and much work with the discrimination and reproduction of minimal pairs should be done to achieve the necessary phonetic distinction.

25. /h/ • Similar to English /h/ as in <u>hot</u>, produced with slighlty greater force. The pronunciation of this phoneme presents little problem for native speakers of English except when it is in final word position. English /h/ always begins a syllable, and is therefore always followed by a vowel as in <u>hit</u> or <u>aha!</u> Arabic /h/, however, may finish a syllable without being followed by a vowel, requiring English speakers to develop the new habit of pronouncing a voiceless /h/ in this position. A method of discovering the utterance of voiceless /h/ in final position is to pronounce

vowel-/h/-vowel sequences such as /aha/, /uhu/, /ihi/ and /oho/, gradually diminishing the length of the second vowel until it disappears altogether. Thus, one would arrive at producing the un-English sounds /ah/, /uh/, /ih/ and /oh/, with a distinctly aspirated but voiceless final /h/.

26. /ʔ/ Glottal stop, produced by an abrupt closing of the vocal bands, resulting in a complete cut-off of air and voice. The glottal stop is quite common in the normal flow of English speech, although it is not phonemic, is not represented orthographically, and is usually pronounced without conscious recognition. It can be observed as the feature which distinguishes the utterances of the minimal pair sentences <u>He is a nice man</u> and <u>He is an ice man</u>. It is also an important feature in the popular English expression <u>uh-oh!</u>, /ʔəʔ:ʔoʔ/. Notice in

these examples the complete stopping of voice and air-flow, and the explosive way in which sound production is resumed after /ʔ/. The glottal stop also typically occurs in English preceding syllables beginning with vowels, as when the names of the vowels, A /ʔey/, E /ʔiy/, I /ʔay/, O /ʔow/ and U /ʔiyuw/ are rapidly pronounced in succession. It may help to remember that no Arabic word begins with a vowel. All begin with some consonant like /ʔ/.

The Vowels

The Arabic vowel system is relatively simple in that it is composed of only three phonemes and their lengthened counterparts: /æ/ as in English bat, /i/ as in bit and /u/ as in boot. Native speakers of English need only be aware that the length or duration of pronunciation is phonemic, and that they must develop the ability to recognize the difference and produce the phonemes at their proper lengths at the appropriate times. (See 'The Vowels', page 22.) To avoid con-

fusion, it should be mentioned here that a number of variations of the vowel phonemes occur as a direct result of the proximity of neighboring velarized consonants. Because velarization requires placing the back of the tongue in a high position (see Figure 6, page 32), neighboring vowels acquire a 'back' quality. Hence, Arabic /æ/ as in hat becomes /a/ as in father, whenever a velarized consonant occurs in the same word. The process of variation is quite natural and calls for only a passive effort on the part of the speaker to carry over the velar tongue position while producing neighboring vowels. This variation resulting from the influence of the velarized consonants will be addressed in the next part of this work.

THE EFFECTS OF CONSONANTS ON NEIGHBORING PHONEMES

Vowel Modification

Among the Arabic consonants, there is a class of phonemes which alter the sound of /æ/ when they occur in the same word. The velarized consonants, /Đ, D, T and/S/, and /q/ and /r/, all require the front part of the tongue to be in a low position while the back of the tongue is raised.

In the case of the velarized consonants, the back of the tongue is raised near the velum, but the front part of the tongue is kept low (see Figure 6, page 32). Whereas the vowel /æ/ calls for the tongue to be slightly raised in the front, the low-back tongue position of the velarized consonants influences the production of /æ/, changing it to /a/, a vowel that has a more low-back quality. Arabic /æ/ therefore becomes /a/, as in English <u>father</u>, in words that contain velarized consonants. The predominant effect of velarization can be heard clearly when minimal pairs of words containing velarized and non-velarized consonant counterparts are contrasted (see 'Minimal Pairs Lists', page 52).

Not only can a deeper hollow sound be distinguished in the velarized examples, but also a change in the neighboring vowels from /æ/ to /a/. The modification of /æ/ occurs regardless of its position in the word, whether it precedes or follows the velarized consonant.

Shifting /æ/ to /a/ in velarized environments is not a process that should demand much conscious effort. It is a quite natural activity which simply calls for allowing the velar tongue position to dominate the production of all vowel sounds in the same word. If the student can develop the habit of leaving his tongue in the velar position as he continues to pronounce the rest of the word, /a/ will inevitably replace /æ/. Likewise, if the student can anticipate a velarized consonant by velarizing all the vowels which precede it in a word, he will also surely produce /a/ in place of /æ/.

Just as the velarized consonants change /æ/ to /a/ in the same word, so do /q/ and /r/, for the same reasons mentioned above.[1]

---

[1] /r/ does not affect /æ/when the word contains a long /i/. An example of this exception to the rule is to be found in the Arabic word for <u>mail</u>, بَرِيد , pronounced /bæri:d/ rather than */bari:d/.

Consonant Modification

Not only do the velarized consonants affect the pronunciation of the neighboring vowel phonemes, but they also alter the production of certain consonants. Those consonants which have velar counterparts, /ḍ, ṭ, ḏ and ṣ/, generally become velarized themselves when they occur in a word which contains some velar consonant. It can be said that the phonetic feature of velarization is so influential that it dominates the entire word in which it occurs. The presence of merely one velarized consonant will shift all others to their velarized counterparts. For example, although the word سَطْر , meaning line, has only one velarized consonant represented orthographically (/T/), its actual pronunciation is /SaTr/, the /T/ causing س to be pronounced /S/ rather than /s/.

In developing the habit of velarizing consonants when they occur with some velarized phoneme, it may be helpful to regard the entire word as velarized. A hint may be to mentally calssify all Arabic words as either velarized or non-velarized. A 'non-velarized' word requires no velarization at all, while a 'velarized'

word calls for the general velarization of /æ/ and and all consonants which have velar counterparts. It will be discovered that generalizing the velar feature to the surrounding phonemes is, in fact, much easier than producung consecutive velarized and non-velarized sounds.

Assimilation of the Definite Article

The definite article in Arabic is ٱل , pronounced /ʔæ l/. Whenever it precedes a noun beginning with a consonant whose point of articulation is interdental, alveolar or palatal (in general, those produced in the front of the mouth), the /l/ is entirely 'assimilated', doubling the following consonant. Thus, the noun درس (lesson), pronounced /drs/, becomes /ʔæddrs/ when the definite article /ʔæ l/ precedes it, and not */ʔæ ldrs/. This special group of frontal consonants which assimilate /l/ with the affixing of the definite article are called 'sun letters', and they are: ت /t/, ث /θ/, د /d/, ذ /ð/, ر /r/, ز /z/, س /s/, ش /š/, ص /S/, ظ /Đ/, ض /D/, ط /T/, ل/1/, and ن /n/. Because their articualtion occurs in the same general area of the mouth as /l/, their predominance overshadows the distinct frontal sound of

/l/ and eliminates it from pronunciation, or 'assimilates' it altogether.

In attaining the habit of leaving out the /l/ when pronouncing Arabic nouns preceded by the definite article, the learner need only anticipate the sun letter consonant, and allow himself to refrain from applying the additional energy needed to produce two distinct consecutive frontal sounds. With practice, it will be found that it is much easier and more natural to leave out the /l/, and let the following frontal consonant prevail.

MINIMAL PAIRS LISTS

For each Arabic phoneme which is new and alien to native speakers of English, there is an English counterpart which is often inappropriately substituted. Minimal pair exercises are intended to eliminate the erroneous pronunciation of an English sound where an Arabic one should occur, and to develop listening skills enabling the learner to recognize the new phonemes.

The following is a list of word pairs which are phonetically identical except for one difficult Arabic phoneme. Each pair should be pronounced by a native speaker, and the learner should listen and identify the word which contains the new phoneme. For example, for practice with the phoneme /q/, the native speaker would pronounce the pair /kæ lbu/(كَلْبُ) and /qalbu/(قَلْبُ), and the student would listen for the contrast and identify the second word as the one containing /q/. The student may then be asked to pronounce the two words in contrast.

/ð/(ظ) and /d/ (ذ)

1.	dæ:lu	ذَالُ	ðа:lu	ظَالُ
2.	naðara	نَظَرَ	nadara	نَذَرَ
3.	duhu:ru	ذُهُورُ	ðuhu:ru	ظُهُورُ
4.	darafa	ذَرَفَ	ðarafa	ظَرَفَ
5.	ðari:fu	ظَرِيفُ	dæ ri:fu	ذَرِيفُ
6.	næ di:ru	نَذِيرُ	naði:ru	نَظِيرُ

/T/(ط) and /t/(ت)

1.	ti:nu	تِينُ	Ti:nu	طِينُ
2.	fætiru	فَاتِرُ	fa:Tiru	فَاطِرُ
3.	lu:Tu	لُوطُ	lu:tu	لُوتُ
4.	tæbæ	تَابَ	Ta:ba	طَابَ
5.	fa:Tinu	فَاطِنُ	fætinu	فَاتِنُ
6.	nabaTu	نَبَطُ	næ bæ tu	نَبَتُ

/D/(ض) and /d/(د)

1.	darbu	دَرْبُ	Darbu	ضَرْبُ
2.	fa:Da	فَاضَ	fæ:dæ	فَادَ
3.	bi:Du	بِيضُ	bi:du	بِيدُ
4.	da:ru	دَارُ	Da:ru	ضَارُ
5.	ʔa:rDu	أَرْضُ	ʔa:rdu	أَرْدُ
6.	raDDa	رَضَّ	ra dda	رَدَّ

/S/(ص) and /s/(س)

1.	Si:nu	صِينُ		si:nu	سِينُ
2.	sa:ra	سَارَ		Sa:ra	صَارَ
3.	sæ i:fu	سَيفُ		Sai:fu	صَيفُ
4.	sifru	سِفْرُ		Sifru	صِفْرُ
5.	næ si:bu	نَسِيبُ		naSi:bu	نَصِيبُ
6.	maSi:ru	مَصِيرُ		mæ si:ru	مَسِيرُ

/x/(خ) and /ġ/(غ)

1.	ġæ d	غَدْ		xæ d	خَدْ
2.	xa:Sa	خَاصَ		ġa:Sa	غَاصَ
3.	xæ:bæ	خَابَ		ġæ:bæ	غَابَ
4.	xilæ:fu	خِلَافُ		ġilæ:fu	غِلَافُ
5.	dæ ġæ læ	دَغَلَ		dæ xæ læ	دَخَلَ
6.	šaġara	شَغَرَ		šaxara	شَخَرَ

/q/(ق) and /k/(ك)

1.	qalbu	قَلْبُ		kæ lbu	كَلْبُ
2.	kamaru	كَمَرُ		qamaru	قَمَرُ
3.	nakara	نَكَرَ		naqara	نَقَرَ
4.	farqu	فَرْقُ		farku	فَرْكُ
5.	naqaba	نَقَبَ		næ kæ bæ	نَكَبَ
6.	raqada	رَقَدَ		rakada	رَكَدَ

/ħ/(ح) and /h/(ه)

1.	ħæ mæ læ	حَمَلَ		hæ mæ læ	هَمَلَ
2.	sæ ħlu	سَحْلٌ		sæ hlu	سَهْلٌ
3.	naħru	نَحْرُ		naħru	نَهْرُ
4.	hæ llæ	هَلَّ		ħæ llæ	حَلَّ
5.	ħarama	هَرَمَ		ħarama	حَرَمَ
6.	šæ :h	شَاهٌ		šæ :ħ	شَاحٌ

The following are lists of 'minimal triplets' for use in exercises to develop dicsrimination and pronunciation skills for the often-confused trio /ħ/, /x/and /h/.

/ħ/(ح), /x/(خ) and /h/(ه)

1.	ħæ dæ m	حَدَمْ		xæ dæ m	خَدَمْ	hæ dæ m	هَدَمْ
2.	tæ ħdim	تَحْدِمْ		t æ xdim	تَخْدِمْ	t æ hdim	تَهْدِمْ
3.	næ bæ ħ	نَبَحْ		næ bæ x	نَبَخْ	næ bæ h	نَبَهْ
4.	yæ nbæ ħ	يَنْبَحْ		y æ nbæ x	يَنْبَخْ	yæ nbæ h	يَنْبَهْ

/ᶜæ/ (ع) and /ʔæ:/ (أ)

1.	ʔæ n	أَنْ		ᶜæ n	عَنْ
2.	wæ ʔæ:dæ	وَأَدَ		w æ ᶜæ dæ	وَعَدَ
3.	ᶜæ læ mu	عَلَمُ		ʔæ læ mu	أَلَمُ
4.	ʔæ mæ lu	أَمَلُ		ᶜæ mæ lu	عَمَلٌ
5.	sæ ᶜæ læ	سَعَلَ		sæ ʔæ læ	سَأَلَ
6.	sæ mæ:ᶜu	سَمَاعُ		sæ mæ: ʔu	سَمَاءٌ

Single and Double Consonants

1.	kæ tæ bæ كَتَبَ	kæ ttæ bæ كَتَّبَ
2.	darrasa دَرَّسَ	darasa دَرَسَ
3.	šæ bbæ kæ شَبَّكَ	šæ bæ kæ شَبَكَ
4.	šæ hæ dæ شَهَدَ	šæ hhæ dæ شَهَّدَ
5.	mæ læ kæ مَلَكَ	mæ llæ kæ مَلَّكَ
6.	kæ ššæ fæ كَشَّفَ	kæ šæ fæ كَشَفَ

Long and Short Vowels

1.	kæ: tæ b كَاتَبْ	kæ tæ b كَتَبْ
2.	ku:n كُونْ	kun كُنْ
3.	bæ næ t بَنَتْ	bæ næ:t بَنَاتْ
4.	sir سِرْ	si:r سِيرْ
5.	y æ su:d يَسُودْ	y æ sud يَسُدْ
6.	sæ fæ r سَفَرْ	sæ:fæ r سَافَرْ
7.	fi:l فِيلْ	fil فِلْ
8.	y æ ku:n يَكُونْ	y æ kun يَكُنْ
9.	bæ:šæ r بَاشَرْ	bæ šæ r بَشَرْ
10.	din دِنْ	di:n دِينْ

REFERENCES

al-Ani, Salaman H. 1967. The Phonology and Script of Literary Arabic. Montreal: McGill University.

-----1970. Arabic Phonology: An Acoustical and Physiological Investigation. The Hague: Mouton.

Gairdner, W.H.T. 1925. The Phonetics of Arabic. Oxford: Oxford University Press.

Jakobson, Roman. 1971. 'Mufaxxama: The "Emphatic" Phonemes in Arabic'. Roman Jakobson's Selected Writings I. 510-22. The Hague: Mouton.

Obrecht, Dean Hubert. 1968. Effects of the Second Formant (F2) on the Perception of Velarization Consonants in Arabic. The Hague: Mouton.

Qafisheh, Hamdi. 1977. A Short Reference Grammar of Gulf Arabic. Tucson, Arizona: University of Arizona Press.